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OLIGODONTIA OF PERMANENT TEETH- RARE CASE REPORTS

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ABSTRACT

Missing of one or more teeth is most common developmental malformation, but absence of multiple teeth is much rare. Oligodontia (developmental absence of 6 or more teeth) can be isolated or as a part of syndrome. The present case report describes two cases of multiple agenesis of permanent teeth which are non-familial and with no apparent systemic abnormalities.

KEY WORDS : **Missing teeth, permanent teeth, oligodontia.**

INTRODUCTION

Dental agenesis is the most common developmental anomaly in humans which can occur in an isolated fashion, or as a part of syndrome. Isolated cases of missing teeth can be familial or sporadic in nature. In the literature, many terms are used to describe missing teeth like oligodontia, anodontia, aplasia of teeth, congenitally missing teeth, absence of teeth, agenesis of teeth and lack of teeth. Absence of one or more teeth, excluding the third molars is relatively common, but oligodontia (absence of six or more teeth) is rare. Here, we report two rare cases of multiple agenesis of permanent teeth.

Case 1:

A 21 year-old male patient was referred to out patient department of Navodaya Dental College with a chief complaint of spacing. On examination, the patient gave no significant past medical and dental history, neither there was any abnormality detected on general examination suggestive of any syndromes (fig 1).The family history did not reveal any multiple missing teeth.

On intra-oral examination 22 teeth were present. The teeth were normal in size, shape, and color with spacing in between the teeth and Angle's class I relationship with deepbite (Fig 2). Further examination revealed the absence of thirteen teeth including third molars and retained deciduous rightmaxillary first, second molars and mandibular right central incisor.

Teeth present were (Fig 3a&b)

16 14 13 12 11 21 22 23 64 65 26
46 45 44 43 42 81 32 33 34 35 36

Panoramic radiograph revealed absence of 13 Permanent teeth. (Fig. 4)

18 17 15 24 25 27 28
48 47 41 31 37 38

Case 2:

This is another interesting case of multiple agenesis of teeth, both in the maxilla and mandible. A 39yr old male patient with chief complaint of spacing and difficulty in chewing was reported. (Fig 5.) On intraoral examination, Angle's class III relationship was observed (Fig 6). Clinical examination revealed retained deciduous maxillary left canine, bilateral mandibular central incisors and lateral incisors, mandibular left canine and bilateral mandibular second molars. (Fig7a,b). There was no history of permanent teeth being extracted. Teeth present were

17 16 14 13 11 21 23 63 24 25 27
46 85 44 43 82 81 71 72 73 33 34 75 36

18 15 12 22 26 28
48 47 45 42 41 31 32 35 37 38 (Fig 8)

Panoramic radiograph revealed absence of 16 permanent teeth.

CASE 1

Fig.1. Facial photographs

Fig.2.photographs showing malocclusion

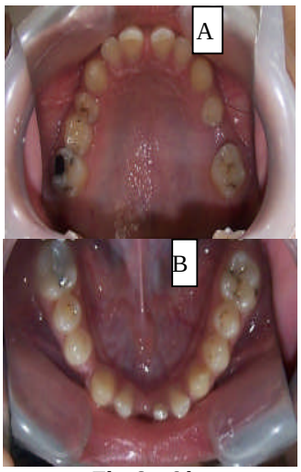

Fig.3a &b. Dention of the patient

Fig.4.Panoromic view of the patient

Discussion:

The commonly used term congenitally missing tooth is a misnomer, as permanent teeth which are most commonly missing are not present in the mouth at birth. Tooth agenesis is a more informative term because it also implies the underlying developmental defects.[1]

Specific terms are used to describe the nature of tooth agenesis, like Hypodontia: 1 to 6 teeth missing (excluding third molars), oligodontia: more than 6 teeth missing (excluding third molars) and anodontia: complete absence of teeth.[2]

Hypodontia and oligodontia are classified as isolated or non-syndromic hypodontia/oligodontia and syndromic hypodontia/oligodontia (or hypodontia /oligodontia associated with syndrome)[3].

Definition/diagnosis criteria: A tooth is defined as congenitally missing if it has not erupted in the oral cavity and is not visible in the radiograph. All primary teeth have erupted by the age of 3 and all permanent teeth except third molars between the ages of 12 and 14. Therefore 3-4 year old children are suitable for diagnosis of congenitally missing primary teeth by clinical examination and 12-14 year old children, for diagnosis of permanent teeth excluding the third molars.[3,4]The use of panaromic radiography is recommended, together with clinical examination for the detection or confirmation of dental development and performing the diagnosis of hypodontia.[5]

Oligodontia is seen as an isolated trait or a part of syndrome. Several factors have been proposed for the etiology of oligodontia. Environmental factors like infection (rubella, osteomyelitis), trauma, drugs (eg:thalidomide), chemotherapy or radiotherapy at a young age has been implicated. Although tooth agenesis is caused by environmental factors, a

CASE 2

Fig.5. Facial photographs

Fig.6.photographs showing malocclusion

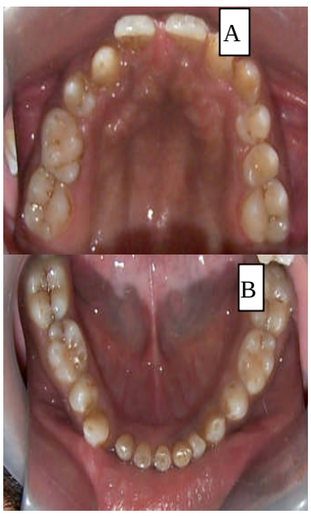

Fig.7a &b. Dentition of the patient

Fig.8.Panoromic view of the patient

strong genetic component has been suggested. It is transmitted as an autosomal dominant trait with incomplete penetrance and variable expressivity. Mutations of MSX-1 and PAX-9 genes are known to cause missing tooth.[5, 6] Recent studies have shown mutations in EDA gene could result in non-syndromic oligodontia.[7]

In our cases, missing teeth (excluding the 3rd molars) were found to be more than 6 without involvement of any systemic disorders or syndromes suggesting isolated or non-syndromic oligodontia.

The incidence of missing teeth may vary considerably depending on dentition, gender, and demographic or geographic profiles. Distinct patterns of agenesis have been detected in the permanent dentition. Grabber stated that the overall frequency of patients with congenitally missing teeth excluding third molars has ranged from 1.6-9.6% in various series of studies in different countries[8]. Missing of single teeth is common but prevalence becomes progressively smaller as the number of missing teeth increases. Oligodontia is a rare anomaly having an overall prevalence of 0.14%.[9] The most common missing teeth are mandibular second premolars followed by maxillary second premolar and maxillary lateral incisors (excluding third molars).[8] Whereas, the rare missing teeth are maxillary central incisor, maxillary and mandibular first molars and canines.[3]

Interestingly in our cases bilateral second molars were missing which accounts for about 0.7-0.8% along with bilateral mandibular central incisors (2.2%). In case 2 mandibular lateral incisors (1.1%)

and maxillary left first molar (0.0%) were also missing.[8]

Several dental anomalies have been reported along with missing teeth like delayed formation and eruption of teeth, reduction in tooth size and form, ectopic eruption of maxillary canines, ectopic eruption of other teeth, infra position of primary molars, short roots of teeth, taurodontism, rotation of teeth and enamel hypoplasia.[3]

In case one, infrapositioning of maxillary left deciduous molars was observed and in case two ectopic eruption of right maxillary first molar and bilateral maxillary second molars were seen

CONCLUSION:

We would like to conclude that Oligodontia cases should be evaluated carefully by clinicians and early diagnosis and treatment planning should be made for appropriate treatment modalities and to minimize the complication of these dental anomalies.

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